

tion of many modern conclusions on evolution and the germ theory of disease. The booklet itself had been sent, early in 1913, to the late Dr. A. R. Wallace by a Mr. B. R. Miller, who stated that he had bought it at a second-hand book store in 1891 or 1892. Prof. Poulton had also heard of the existence of three other copies in the possession of the author's son, Mr. J. F. Sleeper. It was pointed out in last year's address that the work was not registered, as stated; that the word "agnostic," introduced by Huxley in 1869, was used in its pages; and that there was no reference to it in an undoubtedly genuine but commonplace pamphlet published by the author in 1860. Nevertheless, the get-up of the booklet appeared to be so genuine and the style so convincing that many critical authorities were by no means convinced that it was a forgery.

Prof. Poulton, having directed attention to the subject, felt that he must make every effort to produce a body of evidence which would finally decide the question. The investigation, which could not be hurried, was only complete by Easter of the present year, and its results were communicated to the Linnean Society in the anniversary address on May 25 last. The evidence then presented to the Fellows will doubtless lead to the undisputed conclusion that the work is a forgery, and probably a very late forgery.

The Type.—Mr. J. W. Phinney, manager of the American Typefounders' Company, Boston, after an exhaustive inquiry, concluded that it was "impossible that the title-page could have been set at the date claimed for it."

The Contract with the Printer.—This document, forwarded by Mr. J. F. Sleeper, satisfied many authorities, but aroused the suspicions of Prof. C. H. Firth and afterwards of Sir Frederick Kenyon and Sir George Warner. The printer's signature, dated 1890, kindly sent by his daughter, Mrs. Endicott, was similar to that appended to the contract. It was submitted to Sir George Warner, who thought it "very remarkable that after so long an interval as forty years the signatures should be so precisely identical," and considered it "almost easier to believe that the early one is a forgery from a considerably later example." A little later Mrs. Endicott succeeded in finding another late signature also similar to that of the contract, and two early ones, dated 1856 and 1858, in both of which the B of Bense was very differently formed. It was evident, as Sir George Warner had predicted, that the signature of the contract had been copied from a late signature of the printer, W. Bense.

Other evidence of falsification was also submitted to the meeting, and will appear in the pages of the Society's Proceedings. It was suggested in conclusion that the author, self-deceived as to the importance of his own ideas, really believed that he had forestalled many conclusions of modern science. In this way he might defend the falsification of evidence as the only means by which justice could be done not only to himself but to the history of thought.

A similar interpretation might be offered if we suppose—and many reasons were given for the belief—that the forgery was committed after the author's death by one who knew his feelings and shared his delusion that he was the victim of injustice.

THE LANGLEY FLYING MACHINE.

EXPERIMENTS made in May last, at Hammondsport, U.S.A., recall the great share which Prof. S. P. Langley had in the development of aviation, the occasion being the testing of a power-driven man-carrying aeroplane designed and constructed by Langley many years ago. The aeroplane was completed in 1903, and in September and December of that year two attempts were made to launch it from the top of a house-boat on the Potomac River, but owing to defective apparatus the aeroplane and pilot fell into the river. The experiments were discontinued owing to lack of financial support, and the rescued flying machine was carefully cleaned and preserved in the Smithsonian Institution. Now, eleven years later, with floats added to replace the launching apparatus, actual flight has been obtained on the aeroplane substantially as designed except for the floats. The engine weighed only 125 lbs., and actually developed 52 horse-power, a relation of weight to horse-power roughly equivalent to that of the first successful Gnome engine.

The actual flights have so far not exceeded ten seconds, and cannot therefore be considered as conclusive evidence of the satisfactory nature of the Langley design; the results must, however, be considered in reference to the alterations made this year preparatory to the new tests. The design was for a man-carrying aeroplane having a total weight, including pilot, of 830 lbs., whilst the addition of floats and the necessary structure to support them raised the weight to 1170 lbs., and appreciably increased the head resistance. If a launching device of the character first used by the Wright Brothers had been adopted, it is probable that to Langley would have gone the credit for the first successful aeroplane.

NOTES.

WE regret to have to record the death, in his sixty-sixth year, of Dr. R. J. Anderson, professor of Natural History, Geology, and Mineralogy at (Queen's) University College, Galway.

LORD WELBY has been elected president of the Royal Statistical Society for the session 1914-15.

MR. MARCONI has had the order of the Honorary Grand Cross of the Victorian Order conferred upon him.

THE Council of the Royal Society of Arts has received from Mr. R. Le Neve Foster a donation of £100 for the purpose of founding a prize in memory of his father, the late Mr. Peter Le Neve Foster, who was secretary of the society from 1853 to 1879.

It was decided at a meeting of alpinists held at Zermatt on Saturday last to commemorate the 50th anniversary of the first ascent of the Matterhorn (falling on July 14 next) by the erection of a marble statue of Mr. Edward Whymper at the age he was when he first climbed the Matterhorn. The pedestal is to be of granite taken from the Matterhorn and the monument is to face the peak. The memorial will also commemorate Lord Francis Douglas, Mr. Hadow, the Rev. C. Hudson, and the guides, Michel Croz and the two Tangwalders. The cost will be borne by subscriptions. Mr. Justice Pickford, president of the Alpine Club, is to be invited to become the honorary president of the memorial committee. Dr. A. Seiler was appointed treasurer, and Mr. J. Grande, of Berne, honorary secretary.

THE gold medal of the Royal Institute of Public Health for the present year has been awarded to Dr. James Niven, of Manchester. The medal is conferred annually on a public health official at home or abroad, in recognition of conspicuous services rendered to the cause of preventive medicine in the British Empire.

THE first presentation of the Savill medal of the West End Hospital for Nervous Diseases has been made to Dr. Knowles Boney. The medal has been instituted to commemorate Dr. T. D. Savill, who died in 1910, whose work in investigating nervous diseases is well known.

THE Toronto correspondent of the *Times* states that the revenue cutter *Bear*, with Captain Bartlett, master of the lost *Karluk*, on board, left Nome on July 23 in the hope of reaching the survivors of the Stefansson expedition, who are believed to be still marooned on Wrangel Island. The *Bear* carries provisions for the relief of the marooned party, as it is calculated that their food supply will be exhausted by the middle of next month, after which they will have to depend on game.

THE sixth International Dental Congress—the first to be held in this country—will take place in London next week. It will be formally opened by the Right Hon. Herbert Samuel on Tuesday next, and the meetings of the sections, of which there will be ten, will be held on Wednesday, Thursday and Friday.

A MEETING of the International Pharmaceutical Federation is to take place at Berne on August 7 and 8 under the presidency of Prof. L. van Itallie. According to the *Chemist and Druggist* the following are among the subjects to be discussed:—The report of the International Committee on Pharmacopœias; a suggestion to appoint a committee to report on the question of the unification of the nomenclature of pharmacopœias; a proposal to publish a uniform table of the specific gravities of mixtures of alcohol and water; a report on pharmaceutical education; the need of a permanent commission to take charge of the organisation of the International Congress of Pharmacy; organisation of a Press bureau; and a conference having for its object the standardisation of formulæ produced for the purpose of replacing pharmaceutical specialities.

THE eighth meeting of the Italian Society for the Advancement of Science will meet at Bari on October 8–13, 1914, under the presidency of Prof. Camillo Golgi. The secretary is Prof. Vincenzo Reina. The congress is divided into three classes: Class A, physical and mathematical sciences; Class B, biological sciences; Class C, moral sciences. The opening meeting will be held in the hall of the Piccinni Theatre, when Prof. G. Cuboni will deliver an inaugural address on "The Problems of Southern Agriculture." Addresses will be delivered before the conjoint sections by Prof. Coletti on "Tripoli and its Social Structure"; by Prof. Nasini on "What has disappeared and what has been retained or transformed in chemical theories of the past century"; and by Prof. Sergi on "Eugenics in relation to biology and sociology." Amongst the papers to be read before the special sections, the following may be noted: The exploration of the upper atmosphere, by P. Gamba; practical generators of electro-magnetic waves, by Q. Majorana; the progress of dynamics in engineering technics; immunity, by M. Ascoli; muscular contraction, by F. Bottazzi; the progress of psychiatry, by A. Cerletti; internal secretion and anatomical structure, by R. Fusari; vaccino-therapy in typhoid, V. Pensuti; the origin and significance of alternation of generations in plant ontogeny, by R. Pirotta; the chlorophyllian pigments, by F. Plate; internal secretions from the physiological standpoint, by I. Solvioli; the war against harmful insects, by F. Silvestre; a series of papers in political and moral science, by different authors, is also included in the provisional programme.

THE seventh International Aeronautical Congress is to be held at the Lyons Exhibition from September 27 to October 1 next, under the presidency of Lieut.-Col. P. Renard.

THE second annual meeting of the Indian Science Congress is to be held, under the auspices of the Asiatic Society of Bengal, in Madras on January 14–16 next. The president will be Hon. Surgeon-Gen. Bannerman. The secretary of the local committee is Dr. J. L. Simonsen of the Presidency College, Madras, and all communications respecting the congress should be addressed to him.

A CONGRESS of engineers is to take place on September 20–25, 1915, at San Francisco, Cal., U.S.A., in connection with the Panama-Pacific Exhibition. It will be presided over by Col. G. W. Goethals. One of the chief features of the congress will be the reading of a number of papers dealing with the Panama Canal. These contributions will be presented under twenty-two heads, and will include a general report by Col. Goethals.

NEXT year's conference of the British Pharmaceutical Society is to be held at Scarborough under the presidency of Mr. Saville Peck.

AMONG the exhibits in the food section of the Civic Exhibition now held in Dublin is one of great interest. It was originally shown at the Dresden International Health Exhibition in 1911 and repre-

sents, in actual proportions, the cleavage products (bausteine) obtained by Prof. Abderhalden from several proteins such as caseinogen, gliadin, globulin, etc. It was lent by Prof. Abderhalden, of Halle, to Prof. W. H. Thompson, who is in charge of the food section of the Exhibition. It has never been out of Germany before, and is of such value that it is scarcely likely to visit this country again. The Exhibition will close at the end of August.

An exhibition of gyroscopic mechanism is being organised at the Science Museum, South Kensington, and a private view was given on Tuesday last.

ACCORDING to *Science*, the American Ornithologists' Union has appointed a committee on the classification and nomenclature of North American birds. The members of the committee are Messrs. Allen, Brewster, Chapman, Dwight, Grinnell, Merriam, Nelson, Ohlser, Palmer, Richmond, Ridgway, and Stone.

THE new Sir Alfred Jones ward of the Liverpool School of Tropical Medicine at the Liverpool Royal Infirmary was opened by Lady Derby on Thursday last, and was followed by a luncheon at which Sir Thomas Barlow spoke highly of Sir Alfred Jones. He said the numerous expeditions of the school, carried to the very homes of death and disease, had afforded records full of real actual romance. Those expeditions, and protracted researches in the school, had been justified up to the hilt by actual improvement in the health conditions of the districts concerned from carrying out the lessons enforced by research. One great achievement of the school had been its instruction given in tropical medicine and hygiene to post-graduates. Instruction in tropical hygiene told a man how he could profitably begin and make provisional improvements while the larger schemes were getting under way. They had the first stage of research which happily went on, and the second stage of post-graduate teaching which would continue, and they were to take on a third function—that of bringing the study of tropical disease within the curriculum of the medical undergraduate within the school itself. The association of the study of tropical diseases with that of general medicine could not be too close and intimate. The real justification of this step was the bringing of the laboratories and the sick man close together, so that there might be the readiest possible facilities for identifying the real cause of the disease and preparing the quickest and most trustworthy methods of cure. There was no higher scientific task than to cure a sick man.

THE Special Electricity Committee of the London County Council has presented a report to the Council based upon the report prepared by Messrs. Merz and McLellan (see *NATURE*, April 23, 1914, p. 198). The committee recommend the promotion by the Council of a Bill in the next session of Parliament to establish a new undertaking and a new authority for the purpose of controlling its operations, which would actually be carried out by a private company, the present means of supplying electricity in and around London having been found unsatisfactory. According

to the *Times* the details of the scheme are, in brief, as follow:—A new electricity authority is recommended consisting of thirty-one members, of whom the majority would represent the London County Council and the rest the surrounding county councils and county boroughs. The new authority will be empowered by Parliament to set up a new undertaking with a two-fold object: (1) The gradual establishment of large generating stations down the river from which supplies in bulk will be given to such existing undertakings as wish it. (2) The new authority will have the right to acquire by agreement existing undertakings, whether municipal or company, and combine them so as gradually to bring about one unified scheme. The area covered is 964 square miles, with a population of $7\frac{1}{2}$ millions. It contains 70 existing undertakings, and about 80 electric generating stations; 60 per cent. of the electricity sold in this area is at present produced within the county of London.

MANY instances are on record of so-called "wolf-children," said to have been found in the jungles of India. A strange story is now reported from Naini Tal, the summer capital of the United Provinces of Agra and Oudh, of a female child about nine years old found in this neighbourhood, and unable to eat anything except grass and chapatis or native griddle cakes. She has a great mat of head hair and a thick growth on the sides of her face and spine. She bears marks of vaccination and is clearly a child who had, years ago, been abandoned or strayed into the jungle. Her capture is attributed to the fact that she was suffering from an ulcerated foot, and she had also deep scars on her head and knees. The case has attracted much attention, and it will be interesting to learn the result of the physical examination of the girl which is now being made.

In the *Journal of Egyptian Archæology* (vol. i., part iii.), Prof. G. Elliot Smith discusses the question of Egyptian mummies. It has been generally supposed that the history of mummification was as old as Egypt itself, and many examples of prehistoric remains were believed to have been embalmed. But when Prof. Elliot Smith found that the Cairo Museum contained no mummy earlier than the period of the seventeenth dynasty, the problem attracted his attention. There were indications from the discoveries of the so-called "canopic" jars, that the practice was very ancient; and recent discoveries confirm this supposition. We now possess examples of embalming of the tenth and twelfth dynasties, and a specimen in the museum of the Royal College of Surgeons is proved to date from the fifth dynasty, or possibly even earlier. The custom, in spite of Christian teaching, lasted until the coming of the Mohammedans in the seventh century of our era. The methods used and the gradual degeneration of the art are described in this interesting contribution.

In the issue of *Man* for July Mr. Elsdon Best examines the occurrence of cremation among the Maori tribes of New Zealand. It was never practised as a general custom to the exclusion of other methods

for the disposal of the dead. It was used in exceptional cases, as, for instance, when a tribe occupied open country where no suitable places for the final disposal of the bones after exhumation were available; when a raiding party, or even a gang of peaceful travellers, lost one of their members by death outside the tribal boundaries; and it was occasionally practised to stay epidemic disease. At the time of the cremation wands were set up near the pyre as a refuge for the separable soul. The custom no longer prevails, though cases are known where the corpses of British dead were burned by the natives during the last Maori war.

IN No. 4 of the second series of Bankfield Museum Notes, issued by the Halifax Corporation, Miss L. E. Start describes a collection of Coptic cloths presented by Prof. Flinders Petrie. The paper deals with Egyptian dress from the earliest times, and the evolution of the art of weaving is illustrated by excellent sketches from the monuments and by a description of the methods and appliances used. The cloths fall into five groups, of which those representing the period 320-620 A.D. are the most interesting in the series.

NORTHERN Europe has experienced a spell of unusually hot weather during July and the thermometer has, in places, been high almost throughout the month. The type of weather has been anticyclonic over Scandinavia and the adjacent regions, and winds have been very light. The observations used for the following comparisons have been culled from the daily weather reports of the Meteorological Office and a few missing readings have been interpolated. Daily temperatures for July 1 to 24 have been dealt with. The mean temperature for the whole period at Haparanda, at the head of the Gulf of Bothnia, and in close proximity to the Arctic Circle, is 66.4°, which is 1.6° warmer than the mean in London, and 3.8° warmer than the mean at Bath. At Stockholm the mean temperature for July 1 to 24 is 73.0° and at St. Petersburg 71.1°, whilst the mean at Nice is 72.4°, and at Paris only 65.6°, or 0.8° warmer than London. The mean maximum or highest day temperature at Stockholm is 82.1° and at St. Petersburg 80.2°, whilst in London, where the temperature has been in excess of the average, every day at Greenwich, from July 1 to 22, having a temperature above 70°, the mean maximum at Kew was 72.9°. Haparanda was warmer than London on 15 days out of the 24, and St. Petersburg was warmer than London on 21 days, and on two days the sheltered thermometer touched 90°. On five consecutive days, July 3 to 7, the temperature at Bodö, within the Arctic Circle, exceeded that in London, and was above 80° from July 5 to 7. Stockholm was warmer than Bath on 23 days. The colder weather which was being experienced over the British Isles during the closing week of July had also extended somewhat to most other parts of Europe, and the highest day temperature in the northern regions had dropped to about 70°.

ACTING on the advice of the French resident, the King of Annam has recently issued an order pro-
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hibiting the slaughter of the wild elephant in the protectorate of Annam. The capture, domestication, and sale of these animals will be permitted under certain regulations.

DR. ALEXANDER IRVING has reprinted, from the Transactions of the Hertfordshire Natural History Society (vol. xv., part 3, May, 1914), an account of recent discoveries of prehistoric horse remains in the valley of the Stort. He concludes that the specimen discovered has the vertebral column of the zebra and of the forest type of horse, and differs in this respect from all four skeletons in the Museum of the College of Surgeons, as well as from the Prejevalsky horse of Mongolia and from horses of the Plateau type.

ANNALS of the Durban Museum is the title of a new zoological journal, of which the first number, edited by the curator, Mr. E. C. Chubb, was published on June 1. Subsequent numbers are to be issued after such successive intervals as may be found convenient. Of the four articles in the present issue, the longest is one by the editor on a collection of some 2500 South African birds' eggs, representing 308 species, brought together by the late Mr. A. D. Millar; it is illustrated by a coloured plate. In a second article, on the bottle-nosed dolphins, or porpoises, of the genus *Tursiops*, Mr. F. W. True directs attention to the fact that the proper name of the typical species is *T. truncatus*, and not *T. tursio*, the latter specific designation having been originally applied to a larger cetacean from Greenland waters, where there is no evidence of the occurrence of a bottle-nose of any kind.

THE June number of *Naturen* contains a fully illustrated description of the up-to-date hatchery for sea-fishes, which has recently been established at Flödevigen, on the Skagerak, and is now in full working order. In addition to the more important apparatus used in the hatchery, the illustrations include photographs of very young torsk at various stages of development. Many millions of these valuable food-fishes were hatched last year.

As the result of two exploring cruises, Mr. James Hornell is enabled to report (in Bulletin No. 8 of the Madras Fisheries Bureau) the existence off the Tanjore coast of Madras of a trawling-ground of far higher value than any of those off the coast of Ceylon. It comprises a large plateau lying within the hundred-fathom line off Cape Comorin, and appears to be the resort of numerous bottom-feeding food-fishes, which are at present fished only in a desultory manner by natives with the line. Among these fishes are vast shoals of the great oyster-eating ray (*Rhinoptera javanica*), which inflicts such serious damage to the pearl-oyster banks. In a second article in the same issue Mr. Hornell shows that these and other fishes (most of which devour only the immature molluscs) are the real cause of the great periodic fluctuations in the fertility of the pearl-oyster beds of the Gulf of Manaar, which have long puzzled experts. Suggestions for dealing with the evil are appended.

EXPERIMENTS on the inheritance of bodily size in tame rabbits form the subject of an article by Mr. E. C. Macdowell, published by the Carnegie Institu-

tion of Washington. The details are, however, so complex and involved that it is impossible to give a summary of the results within the limits of a paragraph.

THE Scottish Zoological Park has received a collection of East African animals, for the most part antelopes, the gift of Mr. H. S. Pullar, of Bridge-of-Earn.

IN his presidential address to the annual meeting on January 22 (as reported in the society's Proceedings for 1913-14) Mr. A. E. Tonge was enabled to congratulate the South London Entomological and Natural History Society on its flourishing condition, the number of new members added to the roll during 1913 being about double those removed. The attendance at the field and ordinary meetings was, on the whole, satisfactory; an important addition has been made to the society's collection of British Lepidoptera; and the number and quality of the papers read (which are illustrated by nine plates) were considerably above the average.

CONSIDERABLE additions to the British fauna are made in the July number of the *Entomologist's Monthly Magazine*, Dr. Sharp adding a Continental chrysomeline beetle (*Dorcatoma punctulata*), taken near London, Mr. James Edwards several new species of the minute insects of the family Typhlocybidæ, chiefly from Nottinghamshire, and Mr. A. E. J. Carter three species of Diptera hitherto known only from the Continent.

IN an article published in *Naturwiss. Wochenschrift* of July 5, Dr. E. Hennig directs attention to the extraordinary number of dinosaurian remains obtained in Germany and her East African colonies during the last lustrum. The most important of these discoveries have been made in the Keuper of Halberstadt and the corresponding formation of Trossingen and Pfaffenhofen, Württemberg, and in the Jurassic and Cretaceous strata of Tendaguru and other parts of German East Africa. To the remains from Tendaguru reference has been made already on more than one occasion. The dinosaurian finds from the Swabian Trias formed the subject of a communication made by Dr. E. Fraas at the eighty-fifth *Versammlung deutscher Naturforscher und Aerzte* in September, 1913, and Dr. O. Jaekel has described the discoveries at Halberstadt in vols. i. and ii. of *Paläontol. Zeitschrift*. According to the latter communication, the removal of some 100,000 cubic metres of rock has brought to light at least one hundred dinosaurian skeletons. It may be added that two important papers on the origin and morphology of dinosaurs, by Dr. von Huene, have been published, respectively, in the *Neues Jahrb. f. Min.* and the *Zentralbl. f. Min.*, 1914.

IN the July number of *Wild Life* Mr. F. Russell Roberts, who is both a great hunter and an expert photographer, commences a series of illustrated articles on his experiences among the big game of Western and Eastern Africa, dealing in this case with the elephant. His photographs of herds of these great animals in the jungle are admir-

able, and well calculated to arouse in stay-at-home persons an intense desire to behold such wonderful sights. It is a pity that the locality of each photograph is not given, as if this had been done the pictures would have been of value to the naturalist in the determination of the local races of the species. If we might hazard a guess, we should regard the topmost of the two photographs facing p. 120 as representing the big sharp-eared elephant of the White Nile, and the one facing p. 112 as a central or western race.

A REPORT upon the mineral production of the Philippine Islands during the year 1912 has been issued by the Division of Mines of the Bureau of Science of the Government of the Philippine Islands. This publication is interesting both for its contents and as evidence of the progress that our American friends are making in their self-imposed task of civilising the Philippine Islands. From the economic point of view the mineral production is not important, its total value being given as 3,514,745 pesos (356,120*l.*), two-thirds of which is made up of such items as clay pots, bricks, lime, sand, gravel, etc., which are not usually included amongst mineral productions. The only mineral of any real importance is gold, of which 27,582 fine ounces were produced, valued at 118,794*l.*, this being treble the production of the previous year. It is interesting to note that there is a small production (141 tons) of charcoal pig-iron, consumed in making castings, such as pots and ploughshares, for the local market. It is greatly to be regretted that the coal output shows a very serious falling off from 20,000 tons to 2720 tons. The fact that the report is issued uncut is presumably due to the still rudimentary stage of civilisation so far attained in the Philippines.

The Canadian Department of Mines is conducting an elaborate investigation into the preparation and properties of metallic cobalt and its alloys, with the object of increasing the demand for this metal, and thus giving greater economic value to the large deposits containing it at Cobalt, Ontario. The researches are being conducted under Dr H. T. Kalmus at Queen's University, Kingston, Ontario, and the results of the first portion of the investigation have just been published in a bulletin of the Department of Mines. This portion deals entirely with the preparation of metallic cobalt by the reduction of the oxide, the reducing agents employed being respectively carbon, hydrogen, carbon monoxide, and aluminium. The results of the experiments are given with great—perhaps with excessive—detail, and show that, as might have been expected, all the above agents can reduce oxide of cobalt completely under suitable conditions; there is thus little that is new, except that the temperatures at which the reactions take place have been carefully recorded.

THREE out of every five great earthquakes occur along the borders of the Pacific Ocean, and, in the western and more active margin, one of the most sensitive districts is that consisting of the Philippine Islands. During the year 1913 there were, according to the Rev. M. Saderra Masò, 160 shocks important

enough to be timed. Two of those which occurred in eastern Mindanao (on March 14 and April 18) were registered all over the world, and were followed by after-shocks too numerous to chronicle. Two other earthquakes (on August 23 and September 4) were also recorded at Formosa and Zikawei.

No. 8 of vol. ii. of the Economic Proceedings of the Royal Dublin Society contains a lecture delivered by Prof. G. T. Morgan before the Royal Dublin Society on "Modern Dyes and Dyeing." This gives an interesting review of the history of modern dyes and synthetic colouring matters. Amongst other matters, it is stated that more than 90 per cent. of the world's demand for indigo is now met by the synthetic product. A recent discovery of great interest is that made by Friedländer, who has shown that the antique dye, "Tyrian Purple," which was extracted by the ancients from several species of sea-snails, found in the Mediterranean, and was highly prized in Italy and Greece, is in reality dibromindigo.

A VALUABLE contribution to our knowledge of the distribution of radium emanation in the earth's atmosphere is made by Messrs. J. R. Wright and O. F. Smith, of the University of the Philippines, in the February number of the Philippine Journal of Science. Working in Manila and on Mount Pauai at an altitude of 2460 metres, they found by the charcoal absorption method that the average amounts of emanation present during the eight months of observation in terms of its radium equivalent were 82×10^{-12} grams at sea-level and 19×10^{-12} grams on the mountain. In both cases the ratio of the greatest to the least amount observed was 4 to 1, and the changes were closely related to the weather. Fair weather gave high, and heavy rain low content which was especially low during typhoons. As the authors propose to continue their observations, it is to be hoped that they will attempt to trace the paths traversed by the winds which give the high and low values respectively previous to their arrival at the islands.

We learn from the *Engineer* for July 24 that work on the reconstruction of the Quebec bridge over the St. Lawrence River is making very satisfactory progress. The entire substructure was completed last season, and the coming season will see considerable progress on the erection of the superstructure. The superstructure is constructed partly of carbon steel and partly of nickel steel, the floor members being constructed of the former, and the truss members of the suspended span, together with the greater part of the cantilever arms, of the latter material. Drawings giving the arrangement and principal dimensions of the superstructure are included in the article. The bridge is designed for 5000 lb. per lineal foot. Wind load is assumed at 30 lb. per square foot of exposed surface of the two trusses and 1.5 times the elevation of the floor, and 300 lb. per lineal foot as a moving load on the exposed surface of the train. In considering temperature stresses, the following conditions were assumed: a variation of 150°F. in the temperature of the whole structure. A difference of 50°F. between the temperature of steel and masonry. A

difference of 25°F. between the temperature of a shaded chord and the average temperature of a chord exposed to the sun. A difference of 25°F. between the outer webs exposed to the sun and the inner webs of the compression members.

MESSRS. E. MERCK, of 66 Crutched Friars, London, E.C., have issued a pamphlet containing a list of the Merck chemicals now stocked in London. Considerable additions have been made to the number of articles which are kept regularly in stock, especially as regards "Merck's Guaranteed Reagents." Special labels are attached to the latter, which show the impurities from which these reagents have been shown to be free, when tested according to the well-known Merck standards. The list of stock now includes about 650 articles, and about 900 subdivisions, so that immediate delivery can be guaranteed for all the more important pharmaceutical and analytical preparations.

OUR ASTRONOMICAL COLUMN.

COMET 1913f (DELANVAN).—The ephemeris of Delavan's comet (1913f) given below is the continuation of that published by Dr. G. van Biesbroeck in *Astronomische Nachrichten*, No. 4739:—

		R.A. (true)			Decl. (true)	Mag.
		h.	m.	s.		
July 30	...	5	59	6.3	+38° 18' 44".5	6.3
31	...	6	2	5.4	38 41.9	
Aug. 1	...	5	8.2	...	58 45.2	
2	...	8	14.6	...	39 18 54.3	
3	...	11	24.8	...	39 8.6	6.2
4	...	14	39.0	...	59 27.7	
5	...	17	57.3	...	40 19 50.9	
6	...	6	21 19.9	...	+40 40 17.9	6.1

The comet is situated in the region about θ Aurigæ.

ASTRONOMICAL NOTES FOR AUGUST, 1914.—The planet Jupiter will be a fine object for observation, being in opposition to the sun on August 10, and visible during the whole night.

The great red spot and hollow in the southern equatorial belt should be observed and the times of their transits across the central meridian of Jupiter taken. These may be expected to occur at the following approximate times:—

		h. m.				h. m.	
Aug. 8	...	9	30	Aug. 20	...	9	23
10	...	11	8	22	...	11	1
13	...	8	38	25	...	8	31
15	...	10	16	27	...	10	9
17	...	11	54	29	...	11	47
18	...	7	45	30	...	7	38

The spot is now in longitude about 205° . Its accelerated motion since the middle of the year 1914 has caused it to lose 153° of longitude, which represents a westerly drift of about 105,000 miles. The rotation period derived from the motion of the spot was in 1910 equal to 9h. 55m. 37.4s., in 1913 it was 9h. 55m. 35.9s.

THE METEORIC SHOWER OF PERSEIDS.—During the past few years not many of the Perseids have been observed. This year they commenced early, Miss Cook at Stowmarket saw them on July 14. The maximum will probably occur on August 11, but there will also be many meteors on August 12. The moon will somewhat interfere with the success of the observations, as she rises on August 11 at 9.1 p.m., and on August 12 at 9.14 p.m., but she will be nearing third quarter, and her light will therefore not be strong. Observers should ascertain, by counting the horary